



United States Air Force Research Laboratory

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James Jauchem

**HUMAN EFFECTIVENESS DIRECTORATE
DIRECTED ENERGY BIOEFFECTS DIVISION
RADIOFREQUENCY RADIATION BRANCH
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Peer-reviewed Journal Articles

2003

Adair, E. R. and D. R. Black. Thermoregulatory responses to RF energy absorption. Bioelectromagnetics Suppl. 6, S17-S38, 2003.

D'Andrea, J. A., E. R. Adair, and J. O. de Lorge. Behavioral and cognitive effects of microwave exposure. Bioelectromagnetics Suppl. 6, S39-S62, 2003.

Heynick, L.N., S. A. Johnston, and P. A. Mason. Radio frequency electromagnetic fields: Cancer, mutagenesis, and genotoxicity. Bioelectromagnetics Suppl. 6, S74-S100, 2003.

D'Andrea, J. A., Chou, C. K., Johnston, S. A., and E. R. Adair. Microwave effects on the nervous system. Bioelectromagnetics Suppl. 6, S107-S147, 2003.

Heynick, L. N. and J. H. Merritt. Radio frequency fields and teratogenesis. Bioelectromagnetics Suppl. 6, S174-S186, 2003.

Adair, E. R., K. S. Mylacraine, and S. J. Allen. Thermophysiological consequences of whole body resonant RF exposure (100 MHz) in human volunteers. *Bioelectromagnetics* 24:489-501, 2003.

Allen, S. J., E. R. Adair, K. S. Mylacraine, W. Hurt, and J. Ziriak. Empirical and theoretical dosimetry in support of whole body resonant RF exposure (100 MHz) in human volunteers. *Bioelectromagnetics* 24:502-509, 2003.

Nelson, D. A., T. J. Walters, K. L. Ryan, K. B. Emerson, W. D. Hurt, J. M. Ziriak, L. R. Johnson, and P. A. Mason. Inter-species extrapolation of skin heating resulting from millimeter wave irradiation: Modeling and experimental results. *Health Physics* 84:608-615, 2003.

Laughrey, M. S., J. K. Grayson, J. R. Jauchem, and A. E. Misener. Radio-frequency radiation exposure of the F-15 crewmember. *Aviation, Space and Environmental Medicine* 74:851-857, 2003.

Pakhomov, A. G., J. Doyle, B. E. Stuck, and M. R. Murphy. Effects of high power pulses on synaptic transmission and long term potentiation in hippocampus. *Bioelectromagnetics* 24:174-181, 2003.

2002

Kiel, J. L., R. E. Sutter, P. A. Mason, J. E. Parker, P. J. Morales, L. J. Stribling, J. L. Alls, E. A. Holwitt, R. L., R. L. Seaman, and S. P. Mathur. Directed killing of Antrax spores by microwave-induced cavitation. *IEEE Transactions on Plasma Science* 30:1482-1488, 2002.

Pardon, M.-C., G. G. Gould, A. Garcia, L. Phillips, M. C. Cook, S. A. Miller, P. A. Mason, and D. A. Morilak. Stress reactivity of the brain noradrenergic system in three rat strains differing in their neuroendocrine and behavioral responses to stress: Implications for susceptibility to stress-related neuropsychiatric disorders. *Neuroscience* 115:229-242, 2002.

Ryan, K. L., J. R. Jauchem, M. R. Tehrany, and H. Lehnert-Boyle. Platelet-activating factor does not mediate circulatory failure induced by 35-GHz microwave heating. *Methods and Findings in Experimental and Clinical Pharmacology* 24:279-286, 2002.

Pakhomov, A. G., P. Gajšek, L. Allen, B. E. Stuck, and M. R. Murphy. Comparison of dose dependences for bioeffects of continuous-wave and high-peak power microwave emissions using gel-suspended cell cultures. *Bioelectromagnetics* 23:158-167, 2002.

Seaman, R. L., J. E. Parker, J. L. Kiel, S. P. Mathur, T. R. Grubbs, and H. K. Prol. Ultra-wideband pulses increase nitric oxide production by RAW 264.7 macrophages incubated in nitrate. *Bioelectromagnetics* 23:83-87, 2002.

Nunneley, S. A., C. C. Martin, J. W. Slauson, C. M. Hearon, L. D. Nickerson, and P. A. Mason. Changes in regional cerebral metabolism during systemic hyperthermia in humans. *Journal of*

Applied Physiology 92:846-851, 2002.

Gajšek, P., T. J. Walters, W. D. Hurt, J. M. Ziriak, D. A. Nelson, and P. A. Mason. Empirical validation of SAR values predicted by FDTD modeling. *Bioelectromagnetics* 23:37-48, 2002.

2001

Mason, P. A., T.J. Walters, J. DiGiovanni, C. W. Beason, J. R. Jauchem, J. E. Dick, K. Mahajan, S. J. Dusch, B. Shields, J. H. Merritt, M. R. Murphy, and K. L. Ryan. Lack of effect of 94-GHz radio frequency radiation exposure in an animal model of skin carcinogenesis. *Carcinogenesis*, 22:1701-1708, 2001.

Walters, T. J., K. L. Ryan, and P. A. Mason. Regional distribution of Hsp70 in the CNS of young and old food-restricted rats following hyperthermia. *Brain Research Bulletin* 55:367-374, 2001.

Ryan, K. L., M. R. Tehrany, and J. R. Jauchem. Nitric oxide does not contribute to the hypotension of heatstroke. *Journal of Applied Physiology* 90:961-970, 2001.

Gajšek, P., W. D. Hurt, J. M. Ziriak, and P. A. Mason. Parametric dependence of SAR of permittivity values in a man model. *IEEE Transactions on Microwave Theory and Technique* 48:1169-1177, 2001.

Gajšek, P., J. M. Ziriak, W. D. Hurt, T. J. Walters, and P. A. Mason. Predicted SAR in Sprague-Dawley Rats as a function of permittivity values. *Bioelectromagnetics* 22:384-400, 2001.

Erdreich, L. S. and B. J. Klauenberg. Radio frequency radiation exposure standards: Considerations for harmonization. *Health Physics* 80:430-439, 2001.

Adair, E. R., K. S. Mylacraine, and B. L. Cobb. Partial-body exposure of human volunteers to 2450 MHz pulsed or CW fields provokes similar thermoregulatory responses. *Bioelectromagnetics* 22:246-259, 2001.

Jauchem, J. R., K. L. Ryan, M. R. Frei, S. J. Dusch, H. M. Lehnert, and R. M. Kovatch. Repeated exposure of C3H/HeJ mice to ultra-wideband electromagnetic pulses: Lack of effects on mammary tumors. *Radiation Research* 155:369-377, 2001.

2000

Murphy, M. R. and T. J. Lyons. Radio frequency radiation bio-effects research in the Pan-Pacific Area. *Korean Journal of Aerospace and Environmental Medicine* 10:148-153, 2000.

Pakhomov, A. and M. R. Murphy. Low-intensity millimeter waves as a novel therapeutic modality. *IEEE Transactions on Plasma Science* 28:34-40, 2000.

Mason, P. A., W. D. Hurt, J. A. D'Andrea, T. J. Walters, K.L. Ryan, P. Gajšek, D. A. Nelson, K. Smith, and J. M. Ziriak. Effects of frequency, permittivity, and voxel size on predicted specific absorption rate values during electromagnetic field exposure. *IEEE Transactions on Microwave Theory and Techniques* 48:2050-2058, 2000.

Pakhomov, A. G., S. Mathur, J. Doyle, B. Stuck, J. L. Kiel, and M. R. Murphy. Comparative effects of extremely high power microwaves pulses and a brief CW irradiation on pacemaker function in isolated frog heart slices. *Bioelectromagnetics* 21:245-254, 2000.

Nelson, D. A., M. T. Nelson, T. J. Walters, and P. A. Mason. Skin heating effects of millimeter-wave irradiation-Thermal modeling results. *IEEE Transactions on Microwave Theory and Techniques* 48:2111-2120, 2000.

Walters, T. J., D. W. Blick, L. R. Johnson, E. R. Adair, and K. R. Foster. Heating and pain sensations by millimeter waves: Comparison to a simple thermal model. *Health Physics* 78:259-267, 2000.

Kalns, H., K. L. Ryan, P. A. Mason, J. G. Bruno, R. Gooden, and J. L. Kiel. Oxidative stress precedes circulatory failure induced by 35-GHz microwave heating. *Shock* 13:52-59, 2000.

Lu, S.-T., S. P. Mathur, B. Stuck, H. Zwick, J. A. D'Andrea, J. M. Ziriak, J. H. Merritt, G. Luty, D. S. McLeod, and M. Johnson. Effects of high peak power microwaves on the retina of the rhesus monkey. *Bioelectromagnetics* 21:439-454, 2000.

Cobb, B., J. R. Jauchem, S. Miller, M. R. Murphy, P. A. Mason, M. Dooley, and J. M. Ziriak. Neural and behavioral teratological evaluation of rats exposed to ultrawideband electromagnetic fields. *Bioelectromagnetics* 21:524-537, 2000.

Walters, T. J., K. L. Ryan, L. M. Tate, and P. A. Mason. Exercise in the heat is limited by a critical internal temperature. *Journal of Applied Physiology* 89:799-806, 2000.

Kiel, J. L., J. E. Parker, P. J. Morales, J. L. Alls, P. A. Mason, R. L. Seaman, S. P. Mathur, and E. A. Holwitt. Pulsed microwave induced bioeffects. *IEEE Transactions on Plasma Science* 28:161-167, 2000

Hurt, W. D., J. M. Ziriak, and P. A. Mason. Variability in EMF permittivity values: Implications for SAR calculations. *IEEE Transactions on Biomedical Engineering* 47:396-401, 2000.

Jauchem, J. R., K. L. Ryan, and M. R. Frei. Cardiovascular and thermal effects of microwave irradiation at 1 and/or 10 GHz in anesthetized rats. *Bioelectromagnetics* 21:159-166, 2000.

Sienkiewicz, A., Blackwell, R., R. Haylock, R. Saunders, and B. Cobb. Low-level exposure to pulsed 900 MHz microwave radiation does not cause deficits in the performance of a spatial learning task in mice. *Bioelectromagnetics* 21:151-158, 2000.

Ryan, K. L., J. A. D'Andrea, J. R. Jauchem, and P. A. Mason. Radio frequency radiation of millimeter wavelength: Potential occupational safety issues relating to surface heating. *Health Physics* 78:170-181, 2000.

1999

Miller, S., P. Bronson, and M. R. Murphy. Ultrawideband radiation and pentylenetetrazol-induced convulsions in rats. *Bioelectromagnetics* 20:327-329, 1999.

Moulder, J. E., L. S. Erdreich, R. S. Maylapa, J. H. Merritt, W. F. Pickard, and Vijayalaximi. Cell telephones and cancer: What is the evidence for a connection? *Radiation Research* 151:513-531, 1999.

Jauchem, J. R., K. L. Ryan, and M. R. Frei. Cardiovascular and thermal responses in rats during 94 GHz irradiation. *Bioelectromagnetics* 20:264-267, 1999.

Kiel, J. L., J. L. Alls, P. A. Mason, and D. N. Erwin. Luminescent radio frequency radiation dosimetry. *Bioelectromagnetics* 20:46-51, 1999.

1998

Jauchem, J. R. Health effects of microwave exposures: A review of the recent (1995-1998) literature. *Journal of Microwave Power and Electromagnetic Energy* 33:263-274, 1998.

Pakhomov, A. G., Y. Akyel, O. N. Pakhomova, B. E. Stuck, and M. R. Murphy. Current state and implications of research on biological effects of millimeter waves. *Bioelectromagnetics* 19:393-413, 1998.

Jauchem, J. R., M. R. Frei, K. L. Ryan, J. H. Merritt, and M. R. Murphy. Lack of effects of heart rate and blood pressure in ketamine-anesthetized rats briefly exposed to ultra-wideband electromagnetic pulses. *IEEE Transactions on Biomedical Engineering* 46:117-120, 1998.

Frei, M. R., J. R. Jauchem, S. J. Dusch, J. H. Merritt, R. E. Berger, and M. A. Stedham. Chronic, low-level (1.0 W/kg) exposure of mice prone to mammary cancer to 2450 MHz microwaves. *Radiation Research* 150:568-576, 1998.

Walters, T. J., K. L. Ryan, J. C. Belcher, J. M. Doyle, M. R. Tehrany, and P. A. Mason. Regional brain heating during microwave exposure (2.06 GHz), warm-water immersion, environmental heating and exercise. *Bioelectromagnetics* 19:314-353, 1998.

Foster, K. R., A. Lozano-Nieto, P. J. Rui, and T. S. Ely. Heating of tissue by microwaves: A model analysis. *Bioelectromagnetics* 19:420-428, 1998.

Jauchem, J. R., R. L. Seaman, H. M. Lehnert, S. P. Mathur, K. L. Ryan, M. R. Frei, and W. D. Hurt. Ultra-wideband electromagnetic pulses: Lack of effects on heart rate and blood pressure

during two-minute exposures of rats. *Bioelectromagnetics* 19:330-333, 1998.

Walters, T. J., K. L. Ryan, M. R. Tehrany, M. B. Jones, L.A. Paulus, and P. A. Mason. HSP70 expression in the CNS in response to exercise and heat stress in rats. *Journal of Applied Physiology* 84:1269-1277, 1998.

Mickley, G. A. and B. L. Cobb. Thermal tolerance reduces hyperthermia-induced disruption of working memory: A role for endogenous opiates? *Physiology and Behavior* 63:855-865, 1998.

Adair, E. R., S. A. Kelleher, G. W. Mack, and T. S. Morocco. Thermophysiological responses of human volunteers during controlled whole-body exposure at 450 MHz. *Bioelectromagnetics* 19:232-245, 1998.

Jentsch, J. D., P. J. Henry, P. A. Mason, J. H. Merritt, and J. M. Ziriak. Establishing orally self-administered cocaine as a reinforcer in rats using home-cage pre-exposure. *Progress in Neuro-Pharmacology and Biological Psychiatry* 22:229-239, 1998.

1997

Toler, J. C., W. W. Shelton, M. R. Frei, J. H. Merritt, and M. A. Stedham. Long-term, low-level exposure of mice prone to mammary tumors to 435 MHz radiofrequency radiation. *Radiation Research* 148:227-34, 1997.

Frei, M. R., R. E. Berger, S. J. Dusch, V. Guel, J. R. Jauchem, J. H. Merritt, and M. A. Stedham. Chronic exposure of cancer-prone mice to low-level 2450-GHz radiofrequency radiation. *Bioelectromagnetics* 19:20-31, 1997.

Rui, P. J., K. R. Foster, D. W. Blick, and E. R. Adair. A thermal model for human thresholds of microwave-evoked warmth sensation. *Bioelectromagnetics* 18:578-583, 1997.

Ryan, K. L., J. D. Lovelace, M. R. Frei, and J. R. Jauchem. Administration of nitric oxide donor does not affect hypotension induced by 35-GHz heating. *Methods and Findings in Experimental and Clinical Pharmacology* 19:455-464, 1997.

Bao, J.-Z., S.-T. Lu, and W. D. Hurt. Complex dielectric measurements and analysis of brain tissues in the radio and microwave frequencies. *IEEE Transactions on Microwave Theory and Technique* 45:1730-1741, 1997.

Jauchem, J. R., K. L. Ryan, J. D. Lovelace, and M. R. Frei. Effects of esmolol on 35 GHz microwave-induced heat stress. *Journal of Autonomic Pharmacology* 17:165-174, 1997.

Blick, D. W., E. R. Adair, W. D. Hurt, C. J. Sherry, T. J. Walters, and J. H. Merritt. Thresholds of microwave-evoked warmth sensations in human skin. *Bioelectromagnetics* 18:403-409, 1997.

Ryan, K. L., T. J. Walters, M. R. Tehrany, J. D. Lovelace, and J. R. Jauchem. Age does not

affect thermal and cardiorespiratory responses to 35-GHz microwave heating. *Shock* 8:55-60, 1997.

Jauchem, J. R. Exposure to extremely-low-frequency electromagnetic fields and radiofrequency radiation: Cardiovascular effects in humans. *International Archives of Occupational and Environmental Health* 70:9-21, 1997.

Jauchem, J. R. Electromagnetic fields and cancer: Incorrect citations. *Occupational and Environmental Medicine* 54:359-360, 1997.

Jauchem, J. R. and M. R. Frei. Body heating induced by sub-resonant (35 MHz) microwave irradiation: Cardiovascular and respiratory responses in anesthetized rats. *Bioelectromagnetics* 18:335-339, 1997.

Adair, E. R., B. W. Adams, S. A. Kelleher, and J. W. Streett. Thermoregulatory responses of febrile monkeys during microwave exposure. *Annals of the New York Academy of Science* 813:497-508, 1997.

Mickley, G. A., B. L. Cobb, and S. T. Farrell. Brain hyperthermia alters local cerebral glucose utilization: A comparison of hyperthermic agents. *International Journal of Hyperthermia* 13:99-114, 1997.

Vijayalaxmi, M. R. Frei, S. J. Dusch, V. Guel, M. L. Meltz, and J. R. Jauchem. Frequency of micronuclei in the peripheral blood and bonemarrow of cancer prone mice chronically exposed to 2450-MHz radiofrequency radiation. *Radiation Research* 147:495-500, 1997.

Mason, P. A., R. Escarciga, J. M. Doyle, W. R. Romano, R. E. Berger, and J. P. Donnellan. Amino acid concentrations in hypothalamic and caudate nuclei during microwave-induced thermal stress: Analysis by microdialysis. *Bioelectromagnetics* 18:277-283, 1997.

Peer-reviewed Books, Book Chapters, and Refereed Proceedings:

2003

Murphy, M. R., J. H. Merritt, P. A. Mason, J. A. D'Andrea, D. W. Blick, and D. M. Scholl. Bioeffects research in support of the Active Denial System (ADS): A novel directed energy non-lethal weapon. In *Non-Lethal Capabilities Facing Emerging Threats*, Fraunhofer Institut Chemische Technologie, Ettlingen, Germany, pp. 23.1 - 23.15, 2003.

2002

Murphy, M. R. and J. H. Merritt. Bioeffects research for emerging RF technology. In *Proceedings of the Eastern European Meeting and Workshop "Measurements and Criteria for Standards Harmonization in the Field of EMF Exposure" and WHO EMF Standards*

Harmonization Meeting, M. Israel and M. Repacholi, eds., Varna, Bulgaria, pp. 79-92, 2002.

Pakhomov, A. G., X. Du, J. Doyle, J. Ashmore, and M. R. Murphy. Patch-clamp analysis of the effect of the effect of high-peak power and CW microwaves on calcium channels. In Proceedings of the 2nd International Workshop on Biological Effects of EMFs. P. Kostarakis, ed., pp. 281-288, 2002.

2001

Mason, P. A., B. J. Klauenberg, P. Chadwick, P. Gajšek, T. J. Walters, W. D. Hurt, and J. M. Ziriaux. International EMF dosimetry project. In Biological Effects, Health Consequences and Standards for Pulsed Radiofrequency Fields, R. Matthes, J. Bernhardt, and M. Repacholi, eds., ICNIRP, Munchen, Germany, pp. 105-108, 2001.

Murphy, M. R. and J. H. Merritt. The biological effects of high peak power, short pulse width electromagnetic fields. In Biological Effects, Health Consequences and Standards for Pulsed Radiofrequency Fields, R. Matthes, J. Bernhardt, and M. Repacholi, eds., ICNIRP, Munchen, Germany, pp. 139-148, 2001.

Pakhomov, A. G. and M. R. Murphy. A review of Russian/FSU research on pulsed RF bioeffects. In Biological Effects, Health Consequences and Standards for Pulsed Radiofrequency Fields, R. Matthes, J. Bernhardt, and M. Repacholi, eds., ICNIRP, Munchen, Germany, pp. 285-303, 2001.

Murphy, M. R., J. R. Jauchem, J. H. Merritt, C. J. Sherry, M. C. Cook, and C. G. Brown. Acoustic bioeffects research for non-Lethal applications. In Proceedings of the 1st European Symposium on Non-Lethal Weapons, Ettlingen, Germany, pp. 9.1-9.13, 2001.

Pakhomov, A. G., S. Mathur, P. Gajšek, and M. R. Murphy. Use of gel-suspended cell cultures for analysis of dose dependence of microwave bioeffects. In Proceedings of the 5th International Congress of the European BioElectromagnetics Association (EBEA), Helsinki Finland, pp. 15-17, 2001.

Murphy, M. R., D. W. Blick, P. A. Mason, J. H. Merritt, and C. W. Beason. Recent research on the biological effects of millimeter waves. In Proceedings of the 5th International Congress of the European BioElectromagnetics Association (EBEA), Helsinki Finland, pp. 36-37, 2001.

Murphy, M. R. and J. H. Merritt. Bioeffects research for emerging RF technologies. In Proceedings of the Eastern European Regional EMF Meeting and Workshop-Measurements and Criteria for Standards Harmonization in the Field of EMF Exposure, Varna, Bulgaria, May 2001.

Pakhomov, A. G. and M. R. Murphy. A comprehensive review of the research on biological effects of pulsed radiofrequency radiation in Russia and the former Soviet Union. In Advances in Electromagnetic Fields, J. Lin, ed., Kluwer Academic/Plenum Publishers, New York, NY, 2000.

Murphy, M. R. and J. H. Merritt. An update on the RFR programs at the Tri-Service Directed Energy Bioeffects Complex, Brooks AFB TX. In Proceedings of the 10th National Conference on High Power Microwaves, Laurel, Maryland, 3-5 April 2001.

Beason, C. W., J. H. Merritt, and M. R. Murphy. Biological issues concerning human exposure to millimeter waves. In Proceedings of the 10th National Conference on High Power Microwaves, Laurel, Maryland, 3-5 April 2001.

2000

Murphy, M. R. and J. H. Merritt. Bioeffects research for scientifically based radio frequency radiation standards. In Proceedings of the Annual Meeting of the Korean Electrical Engineering Society (KEES), Seoul, Korea, 17-23 October 2000.

Murphy, M. R. and J. H. Merritt. Biological effects of high peak power, low average power EMF pulses. In Proceedings of the 2nd International EMF Seminar in China: Electromagnetic Fields and Biological Effects, Xian, China, 24-30 October 2000.

Murphy, M. R. and J. H. Merritt. Health and safety of exposure to high peak power microwaves (HPM) and ultrawide band radiation (UWB). In Proceedings of the UNESCO Seminar on Cellular Mechanisms of Beneficial and Harmful Effects of Electromagnetic Fields, Yerevan, Armenia, 1-15 October 2000.

Merritt, J. H., M. R. Murphy, and B. J. Klauenberg. Environmental assessments of the siting and operation of military radar systems. In Effects of Electromagnetic Fields on the Living Environment, R. Matthes, J. Bernhardt, and M. Repacholi, eds. Proceedings of an International Seminar sponsored by the International Commission on Non-ionizing Radiation Protection and the World Health Organization, Ismaning, Germany, 4-5 October 1999. Published October 2000.

Hurt, W. D., J. M. Ziriaux, and P. A. Mason. Dosimetry for electromagnetic exposures. In Countering the Directed Energy Threat: Are Closed Cockpits the Ultimate Answer? Proceedings of a Human Factors and Medicine Panel Symposium, 26-28 April 1999, Antalya, Turkey. NATO Research and Technology Agency Publication No. RTO-MP-30 AC/323(HFM)TP/10, North Atlantic Treaty Organization, Research and Technology Organization, pp. 4-1 – 4-7, January 2000.

Mason, P. A., W. D. Hurt, J. M. Ziriaux, T. J. Walters, K. L. Ryan, D. A. Nelson, K. I. Smith, D. S. Townsend, and J. A. D'Andrea. Models used to determine the bioeffects of directed energy exposures. In Countering the Directed Energy Threat: Are Closed Cockpits the Ultimate Answer? Proceedings of a Human Factors and Medicine Panel Symposium, 26-28 April 1999, Antalya, Turkey. NATO Research and Technology Agency Publication No. RTO-MP-30 AC/323(HFM)TP/10, North Atlantic Treaty Organization, Research and Technology Organization, pp. 7-1 – 7-8, January 2000.

Adair, E. R. Potential for over-exposure to directed electromagnetic energy in an open

operational environment. In Countering the Directed Energy Threat: Are Closed Cockpits the Ultimate Answer? Proceedings of a Human Factors and Medicine Panel Symposium, 26-28 April 1999, Antalya, Turkey. NATO Research and Technology Agency Publication No. RTO-MP-30 AC/323(HFM)TP/10, North Atlantic Treaty Organization, Research and Technology Organization, pp. 8-1 – 8-8, January 2000.

Jauchem, J. R. Potential cognitive/behavioral and cardiovascular effects of low level microwave exposures in humans. In Countering the Directed Energy Threat: Are Closed Cockpits the Ultimate Answer? Proceedings of a Human Factors and Medicine Panel Symposium, 26-28 April 1999, Antalya, Turkey. NATO Research and Technology Agency Publication No. RTO-MP-30 AC/323(HFM)TP/10, North Atlantic Treaty Organization, Research and Technology Organization, pp. 3-1 – 3-14, January 2000.

Klaunberg, B. J. NATO involvement in radio frequency radiation (RFR) research and health safety. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klaunberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 1-10, 2000.

Murphy, M. R. United States Air Force support of radio frequency radiation health and safety: Bioeffects, Dosimetry, and Standards. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klaunberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 11-20, 2000.

Hurt, W. D. Absorption characteristics and measurement concepts. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klaunberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 39-52, 2000.

Adair, R. K. Biophysics limits on the biological effects of ultrawideband electromagnetic radiation. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klaunberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 63-72, 2000.

Mason, P. A., J. M. Zirias, W. D. Hurt, T. J. Walters, K. L. Ryan, D. A. Nelson, K. I. Smith, and J. A. D'Andrea. Recent advances in dosimetry measurements and modeling. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klaunberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 141-155, 2000.

Pakhomov, A. G., S. P. Mathur, Y. Aykel, J. L. Kiel, and M. R. Murphy. High-resolution microwave resolution in lossy media. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klaunberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 187-198, 2000.

Walters, T. J., P. A. Mason, K. L. Ryan, D. A. Nelson, and W. D. Hurt. A comparison of SAR

values determined empirically and by FD-TD modeling. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klauenberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 207-216, 2000.

Adair, E. R. Thermoregulation: Its role in microwave exposure. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klauenberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 345-356, 2000.

Merritt, J. H. and L. N. Heynick. Teratologic effects of exposure to radio frequency radiation. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klauenberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 383-392, 2000.

Mitchell, J. C. Historical perspective on the radio frequency radiation handbook: Yesterday, today and tomorrow. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klauenberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 547-554, 2000.

Ziriaux, J. M., P. A. Mason, W. D. Hurt, J. A. D'Andrea, M. A. Arce, and J. F. Petri. Dosimetry measurements and modeling: Interactive presentations in the new dosimetry handbook. In Radio Frequency Radiation Dosimetry and Its Relationship to the Biological Effects of Electromagnetic Fields, B. Klauenberg and D. Miklavcic, eds., Kluwer Academic Publishers, Dordrecht, Netherlands, pp. 555-564, 2000.

1999

Pakhomov, A. G., S. P. Mathur, M. Belt, and M. R. Murphy. Dose Dependencies in Bioeffects of Extremely High Peak Power Microwave Pulses. In Electromagnetic Fields: Biological Effects and Hygienic Standards, Moscow, Russia, 18-22 May 98, World Health Organization Publications, 1999.

W. D. Hurt and P. A. Mason. Dosimetry models used to determine the bioeffects of directed energy. In Models for Aircrew Safety Assessment: Uses, Limitations and Requirements, RTO-MP-20, Proceedings of Specialists Meeting of the RTO Human Factors and Medicine Panel, North Atlantic Treaty Organization, Research and Technology Organization, August 1999.

Ziriaux, J. M., C. M. Furse, J. A. D'Andrea, J.-H. Gao, P. A. Mason, W. D. Hurt, and O. P. Gandhi. Comparison of FD-TD and Experimentally Determined Local SAR Values. In Electricity and Magnetism in Biology and Medicine, F. Bersani, ed., Kluwer Academic/Plenum Publishers, pp. 287-290, 1999.

Adair, E. R., S. A. Kelleher, L. G. Berglund, and G. W. Mack. Physiological and Perceptual Responses of Human Volunteers During Whole-Body RF Exposure at 450 MHz. In Electricity

and Magnetism in Biology and Medicine, F. Bersani, ed., Kluwer Academic/Plenum Publishers, pp. 613-616, 1999.

Mason, P. A., J. Ziriak, W. D. Hurt, and J. A. D'Andrea. 3-Dimensional Models for EMF Dosimetry. In Electricity and Magnetism in Biology and Medicine, F. Bersani, ed., Kluwer Academic/Plenum Publishers, pp. 291-294, 1999.

1997

Leonowich, J. A. Introduction and physics of non-ionizing radiations. In Non-Ionizing Radiation: An Overview of the Physics and Biology, K. Hardy, M. Meltz, and R. Glickman, eds., Medical Physics Publishing Co., Madison, WI, 1997.

Hurt, W. D. Dosimetry of radiofrequency (RF) fields. In Non-Ionizing Radiation: An Overview of the Physics and Biology, K. Hardy, M. Meltz, and R. Glickman, eds., Medical Physics Publishing Co., Madison, WI, 1997.

Adair, E. R. Thermal effects of radiofrequency radiation. In Non-Ionizing Radiation: An Overview of the Physics and Biology, K. Hardy, M. Meltz, and R. Glickman, eds., Medical Physics Publishing Co., Madison, WI, 1997.

Merritt, J. H., M. R. Murphy, and J. R. Jauchem. Biological effects of ultrawide band emissions. In Proceedings of the 8th National Conference on High Power Microwave Technologies, Laurel, Maryland, 8-10 April 1997.

Non-peer Reviewed Publications and Abstracts

2003

Mason, P., C. Heal, L. Sayegh, M. Silver, R. Constable, T. Ridgeway, C. Land, and D. Scholl. Stormchaser: collection of real-time crowd control and area denial data. 5th Annual Non-Lethal Technology Academic Research Symposium (NTARS), Arlington, VA, 4-5 November 2003.

Constable, R., D. Scholl, L. Sayegh, and P. Mason. Development of predictive models of crowd behavior for users of non-lethal weapons and technologies. 5th Annual Non-Lethal Technology Academic Research Symposium (NTARS), Arlington, VA, 4-5 November 2003.

Murphy, M., J. Merritt, P. Mason, and W. Hurt. Electromagnetic fields (EMFs) for non-lethal applications: Bioeffects, dosimetry, and standards. 5th Annual Non-Lethal Technology Academic Research Symposium (NTARS), Arlington, VA, 4-5 November 2003.

Jauchem, J. R., C. J. Sherry, M. C. Cook, G. C. Brown, J. H. Merritt, and M. R. Murphy. The potential use of high-intensity acoustics for non-lethal applications. 5th Annual Non-Lethal Technology Academic Research Symposium (NTARS), Arlington, VA, 4-5 November 2003.

Kiel, J. L., J. E. Parker, P. A. Mason, P. J. Morales, M. A. Sloan, J. Vivekananda, and E. A. Holwitt. Using specific binding of DNA Capture Elements to direct pulsed power killing of biological agents. 14th International Pulsed Power Conference, Dallas, TX, June 2003.

Pakhomov, A. G., J. Doyle, J. Ashmore, and M. R. Murphy. Effect of 9.6 GHz microwaves on 4-aminopyridine-induced bursts in isolated hippocampal slices. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Pakhomov, A. G., S. P. Mathur, and M. R. Murphy. High-resolution temperature and SAR measurement using different sensors. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Adair, E. R., J. M. Ziriaux, K. S. Mylacraine, and S. J. Allen. Characterization of mammalian temperature sensitive neurons and their role in RF exposure. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Doyle, J. M. R. Murphy, and A. G. Pakhomov. High-power microwave pulses phased with evoked synaptic potentials may affect synaptic transmission. Abstracts of the 25th Annual Meeting of Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Ziriaux, J. M., P. A. Mason, J. A. D'Andrea, and W. D. Hurt. Use the source: A review of open source software for bioelectromagnetics. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Ziriaux, J. M., P. A. Mason, J. A. D'Andrea, D. G. Verrett, A. L. Lyssy, and W. D. Hurt. Organ resonance in whole and partial body models. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Mylacraine, K. S., P. A. Mason, W. D. Hurt, J. M. Ziriaux, and V. M. Swegle. Using 3-D CAD objects to populate a realistic voxel-based environment. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Hatcher, D. J., J. A. D'Andrea, J. Ziriaux, and W. D. Hurt. Accurately determining average SAR and resonant frequency of different targets. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Adair, E. R., J. M. Ziriaux, S. J. Allen, and K. S. Mylacraine. How central thermosensors may control human heat loss during whole-body RF exposure at resonance. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Curran, A. R., E. A. Marttila, D. A. Nelson, J. M. Ziriaux, P. A. Mason, and W. D. Hurt. Three-dimensional, voxel-based bio-heat transfer code for whole body-simulation of RF heating. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Nelson, D. A., E. Ng, A. R. Curran, E. A. Marttila, J. M. Ziriak, P. A. Mason, and W. D. Hurt. Localized tissue heating effects of human exposure to 400-MHz and 800-MHz fields: Results of whole-body thermoregulatory modeling. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Millenbaugh, N. J., R. V. Blystone, J. E. Kalns, P. A. Mason, L. L. Soza, W. S. Lawrence, J. S. Eggers, C. T. Kuhnel, L. R. Johnson, and J. L. Kiel. Comparison of vascular and thermal responses in rats exposed to prolonged millimeter wave or environmental heating. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Sypniewska, R., J. E. Kalns, P. A. Mason, N. J. Millenbaugh, L. L. Soza, W. Lawrence, R. V. Blystone, J. S. Eggers, and J. L. Kiel. Exposure to 35-GHz millimeter wave energy causes changes in expression of heat-shock protein 27 (HSP-27). Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Eggers, J. S., R. V. Blystone, N. J. Millenbaugh, J. E. Kalns, P. A. Mason, J. L. Kiel, L. L. Soza, and W. Lawrence. Pathology of rat skin following prolonged millimeter wave exposure. Abstracts of the 25th Annual Meeting of the Bioelectromagnetics Society, Maui, HI, 22-27 June 2003.

Kiel, J. L., M. A. Sloan, L. J. V. Stribling, P. A. Mason, and J. E. Parker. Use of high powered pulsed microwave radiation and organic semi-conductor to reversibly open spore coats and cell walls of bacteria. ElectroMed 2003, 3rd International Symposium on Nonthermal Medical/Biological Treatments using Electromagnetic Fields and Ionized Gases, San Antonio, TX, 11-13 June 2003, pp. 23-24.

Pakhomov, A., A. Phinney, J. Ashmore, J. Kolb, S. Kono, K. Schoenbach, and M. Murphy. Quantitative analysis of cytotoxicity of ultrashort (10 ns) electrical pulses in mammalian cells. ElectroMed 2003, 3rd International Symposium on Nonthermal Medical/Biological Treatments using Electromagnetic Fields and Ionized Gases, San Antonio, TX, 11-13 June 2003, pp. 66-67.

Millenbaugh, N. J., R. Sypniewska, J. E. Kalns, P. A. Mason, L. L. Soza, W. S. Lawrence, J. S. Eggers, J. L. Kiel, and R. V. Blystone. Identification of biomarkers of millimeter wave overexposure using proteonomics and high pressure liquid chromatography. ElectroMed 2003, 3rd International Symposium on Nonthermal Medical/Biological Treatments using Electromagnetic Fields and Ionized Gases, San Antonio, TX, 11-13 June 2003, pp. 68-69.

Rogers, W. R., J. H. Merritt, and M. R. Murphy. Strength-duration curve for an electrically excitable tissue extended down to one nanosecond. ElectroMed 2003, 3rd International Symposium on Nonthermal Medical/Biological Treatments using Electromagnetic Fields and Ionized Gases, San Antonio, TX, 11-13 June 2003, p. 73-74.

Joshi, R. P. and W. R. Rogers. Simulation analysis of nanosecond electrical stimulation. ElectroMed 2003, 3rd International Symposium on Nonthermal Medical/Biological Treatments

using Electromagnetic Fields and Ionized Gases, San Antonio, TX, 11-13 June 2003, pp. 87-88.

Seaman, R. L., J. R. Jauchem, S. P. Mathur, A. M. Phiney, and J. L. Ashmore. Lack of change in temporal characteristics of the rat ecg during exposure to ultra-wideband pulses. ElectroMed 2003, 3rd International Symposium on Nonthermal Medical/Biological Treatments using Electromagnetic Fields and Ionized Gases, San Antonio, TX, 11-13 June 2003, pp. 123-124.

Laughrey, M. S., J. K. Grayson, J. R. Jauchem, and A. E. Misener. Radio-frequency radiation exposure of the F-15 crewmember. Abstracts of the 74th Annual Meeting of the Aerospace Medical Association, San Antonio, TX, 4-9 May 2003.

Mason, P. A., J. M. Zirias, M. R. Murphy, W. D. Hurt, and J. D. D'Andrea. Radio frequency radiation dosimetry in whole-body and partial-body human dosimetry models. 3rd International EMF Seminar in China, Guilin, China, 18-22 April 2003.

Scholl, D., L. Sayegh, R. Constable, and P. A. Mason. Development of predictive models of crowd behavior for users of non-lethal weapons and technologies. 12th Conference on Behavior Representation in Modeling and Simulation (BRIMS), Scottsdale, AZ, 12-15 May 2003.

2002

Rogers, W. R., M. R. Murphy, and J. H. Merritt. Single-pulse, contact-stimulation strength-duration curve extended downward to 1 nanosecond. Abstracts of the 32nd Annual Meeting of the Society for Neuroscience, Orlando, FL, 2-7 November 2002.

Scholl, D. M., P. A. Mason, M. R. Murphy, J. H. Merritt, and J. A. D'Andrea. Active Denial System human effects. 5th Annual Directed Energy Symposium, Monterey, CA, 13-15 November 2002.

Mason, P. A., Miller, S. A., J. H. Merritt, Scholin, T. L., Kuhnel, C., Curtis, J. M., Broner, A., A. L. Salazar, G. W. Lantrip, and M. R. Murphy. The Air Force Research Laboratory's current blood brain barrier (BBB) research effort. Non-Lethal Technology Academic Research Symposium (NTARS) IV, San Diego, CA, 13-15 November 2002.

Shen, W., C. J. Sherry, T. E. Dayton, J. Simonds, K. Ho, and J. H. Stuhmiller. Development of a skin penetration criteria based on skin response. Non-Lethal Technology Academic Research Symposium (NTARS) IV, San Diego, CA, 13-15 November 2002.

Simonds, J. Examination of current non-lethal weapon lethality criteria. Non-Lethal Technology Academic Research Symposium (NTARS) IV, San Diego, CA, 13-15 November 2002.

Scholl, D. M., P. A. Mason, M. R. Murphy, and J. H. Merritt. Bioeffects behind active denial technology: Status of bioeffects support in fielding stand-off non-lethal weapon system. Non-Lethal Technology Academic Research Symposium (NTARS) IV, San Diego, CA, 13-15 November 2002.

Constable, R. and M. R. Murphy. A non-lethal weapons human effectiveness knowledge database. Non-Lethal Technology Academic Research Symposium (NTARS) IV, San Diego, CA, 13-15 November 2002.

Dourson, M., B. Hakkinen, P. Nance, J. Patterson, J. Haber, P. Trice, R. Tominack, J. Simonds, and B. J. Klauenberg. Risk characterization Model-1.1 and an assessment and characterization for 66 mm non-lethal grenade. Non-Lethal Technology Academic Research Symposium (NTARS) IV, San Diego, CA, 13-15 November 2002.

Miller, R. L., M. R. Murphy, and J. H. Merritt. Radio frequency radiation bioeffects programs at the U. S. Air Force Research Laboratory. International Workshop on the Biological Effects of Electromagnetic Fields, Rhodes, Greece, 7-10 October 2002.

Pakhomov, A. G., X. Du, J. Doyle, J. Ashmore, and M. R. Murphy. Patch-clamp analysis of the effects of high-peak power and CW microwaves on calcium channels. International Workshop on the Biological Effects of Electromagnetic Fields, Rhodes, Greece, 7-10 October 2002.

Murphy, M. R. Human response to radio frequency radiation: Activities of the U. S. Air Force Research Laboratory. 3rd International Conference on Electromagnetic Fields and Human Health: Fundamental and Applied Research, Moscow and St. Petersburg, Russia, 18-24 September 2002.

Merritt, J. H. and P. A. Mason. An attempt to replicate microwave effects on calcium efflux from the chick brain. 3rd International Conference on Electromagnetic Fields and Human Health: Fundamental and Applied Research, Moscow and St. Petersburg, Russia, 18-24 September 2002.

Kiel, J. L. Biochemical reactions subject to fast rise-time, rapid-pulse radio frequency radiation. 3rd International Conference on Electromagnetic Fields and Human Health: Fundamental and Applied Research, Moscow and St. Petersburg, Russia, 18-24 September 2002.

Pakhomov, A. G., J. Doyle, and M. R. Murphy. Effect of high-power microwave pulses on synaptic transmission and plasticity in brain neurons. 3rd International Conference on Electromagnetic Fields and Human Health: Fundamental and Applied Research, Moscow and St. Petersburg, Russia, 18-24 September 2002.

Mason, P. A., J. M. Ziriak, W. D. Hurt, P. Gajšek, D. G. Verrett, and A. L. Lyssy. Radio frequency radiation dosimetry in man and animal computer models. 3rd International Conference on Electromagnetic Fields and Human Health: Fundamental and Applied Research, Moscow and St. Petersburg, Russia, 18-24 September 2002.

Ziriak, J. M., W. D. Hurt, J. A. D'Andrea, D. G. Verrett, A. L. Lyssy, and P. A. Mason. Performance of FDTD: Organ resonance and whole vs. partial body models. 3rd International Conference on Electromagnetic Fields and Human Health: Fundamental and Applied Research,

Moscow and St. Petersburg, Russia, 18-24 September 2002.

Millenbaugh, N. J., P. A. Mason, C. Kuhnel, L. E. Johnson, J. E. Kalns, R. V. Blystone, and J. L. Kiel. Dosimetry for in vitro cell cultures during 35-GHz exposure. Abstracts of the 9th Annual Michaelson Research Conference, Portland, ME, 9-12 August 2002.

Ziriaux, J. M., P. A. Mason, W. D. Hurt, D. Verrett, V. Swegle, and J. A. D'Andrea. Exploring specific absorption rate as a function of frequency in the Brooks 1-mm man model using finite difference time domain (FDTD). Abstracts of the 9th Annual Michaelson Research Conference, Portland, ME, 9-12 August 2002.

Mason, P. A., D. Nelson, T. J. Walters, K. L. Ryan, K. Emerton, W. D. Hurt, J. M. Ziriaux, and L. E. Johnson. Inter-species extrapolation of skin heating from millimeter wave irradiation. Abstracts of the 9th Annual Michaelson Research Conference, Portland, ME, 9-12 August 2002.

Murphy, M. R. and S. A. Miller. Ultrasonic vocalizations as a versatile index of emotionality. 4th International Conference on Methods and Techniques in Behavioral Research, Amsterdam, Netherlands, 27-30 August 2002.

Scholl, D. M., P. A. Mason, J. H. Merritt, and M. R. Murphy. Human effects research in support of the Active Denial System: A new EM-based non-lethal weapon. American Electromagnetics Conference, Annapolis, MD, 3-6 June 2002.

Mason, P. A., M. R. Murphy, and J. H. Merritt. Radio frequency radiation bioeffects research at the Air Force Research Laboratory. American Electromagnetics Conference, Annapolis, MD, 3-6 June 2002.

Miller, S. A., M. C. Cook, M. R. Miller, J. H. Merritt, and P. A. Mason. Genetic differences in fear-potentiated startle: A paradigm for behavioral assessment. Abstracts of the 11th Annual International Behavioral Neurosciences Society Meeting, Capri, Italy, June 2002.

Cobb, B. L. and E. R. Adair. Radial-arm maze performance in rats following repeated low level microwave (MW) radiation. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Adair, E. R., K. S. Mylacraine, and S. J. Allen. Human thermophysiological response to whole-body RF exposures (100 MHz) regulate the body temperature efficiently. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Millenbaugh, N. J., P. A. Mason, W. D. Hurt, C. T. Kuhnel, L. R. Johnson, J. E. Kalns, R. V. Blystone, and J. L. Kiel. Dosimetry for in vitro cell cultures during 35-GHz exposure. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Ziriak J. M., J. A., D'Andrea. W. D. Hurt, D. Verrett, P. A. Mason, D. Hatcher, and D. Cox. Finite Difference Time Domain (FDTD) models predict organ resonances in the 1-mm man model. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Pakhomov, A. G., J. Doyle, J. Ashmore, and M. R. Murphy. Thermal limits for functional damage and recovery in brain tissue after a brief (500MX) high-intensity microwave exposure. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Doyle, J., S. Mathur, M. R. Murphy, and A. G. Pakhomov. Comparative effects of continuous-wave and high peak power microwave emissions on the induction of long-term potentiation. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Millenbaugh, N. J., J. E. Kalns, R. V. Blystone, P. A. Mason, J. S. Eggers, J. M. Frazier, K. L. Ryan, W. S. Lawrence, L. L. Soza, and J. L. Kiel. Use of gene array technology to survey gene expression changes in tissues of rats exposed to 35 GHz or infrared heating. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Rogers, W. R., J. H. Merritt, M. R. Murphy, T. Baker, C. Kuhnel, and L. E. Johnson. Extension of the single-pulse contract-stimulation strength-duration curve down to 5 nanoseconds. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Kalns, J. E., N. J. Millenbaugh, R. V. Blystone, J. Eggers, W. Lawrence, L. Soza, J. L. Kiel, K. Ryan, P. A. Mason, and F. Witzmann. Proteomics analysis of plasma reveals that prolonged 35-GHz exposure causes upregulation of acute phase proteins. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

Kalns, J. E., N. J. Millenbaugh, R. V. Blystone, J. Eggers, W. Lawrence, L. Soza, J. L. Kiel, and P. A. Mason. Comparison of changes in colonic and skin temperatures during prolonged exposure to millimeter waves, environmental heat, or infrared heat lamps. Abstracts of the 24th Annual Meeting of the Bioelectromagnetics Society, Quebec City, Canada, 22-27 June 2002.

2001

Mason, P. A. and M. R. Petersen. IEEE EMF health & safety standards. Proceedings of the World Health Organization Meeting on EMF Biological Effects and Standards Harmonization in Asia and Oceania, Seoul, Korea, 22-24 October 2001.

Dick E. J., P. A. Mason, T. J. Walters, J. DiGiovanni, C. W. Beason, J. R. Jauchem, A. Barshay, K. Mahajan, S. J. Dusch, B. A. Shields, J. H. Merritt, E. R. Adair, M. R. Murphy, and K. L. Ryan. Lack of effect of 94-GHz radio frequency radiation exposure in an animal model of skin

carcinogenesis. Proceedings of the Annual Meeting of the American College of Veterinary Pathologists & American Society for Veterinary Clinical Pathology, Salt Lake City, UT, 1-5 December 2001.

Mason, P. A., J. M. Ziriaux, W. D. Hurt, P. Gajšek, J. A. D'Andrea, and M. R. Murphy. Microwave dosimetry: From prolate spheres to thermoregulatory models. Abstracts of the Asia-Pacific Radio Science, Tokyo, Japan, 1-4 August 2001.

Miller, S. A., J. H. Merritt, P. A. Mason, and M. R. Murphy. Blood-brain barrier continues to protect against pyridostigmine (pyr) following exposure to stress and microwave radiation. Abstracts from the 2001 Conference on Illnesses among Gulf War Veterans: A Decade of Scientific Research, Alexandria, VA, 24-25 January 2001.

Cook, M. C., S. A. Miller, M. R. Murphy, J. H. Merritt, and P. A. Mason. Genetic susceptibility of three rat strains to a model of post-traumatic stress disorder. Abstracts of the 31st Annual Meeting of the Society for Neuroscience, San Diego, CA, 10-15 November 2001.

Miller, S. A., J. H. Merritt, M. R. Murphy, C. T. Kuhnel, R. L. Taylor, J. M. Curtis, W. D. Hurt, T. L. Scholin, and P. A. Mason. Dosimetry measurements on animals exposed in transverse electromagnetic transmission line (TEM) cells to 915 MHz radio frequency radiation. Abstracts of the 8th Annual Michaelson Conference, Kalispell, Montana, 10-14 August 2001.

Adair, E. R., B. L. Cobb, and K. S. Mylacraine. Human thermophysiological responses to RF exposure at similar peak SAR are a function of exposure frequency. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Gajšek, P., T. J. Walters, J. M. Ziriaux, W. D. Hurt, and P. A. Mason. Validation of FD-TD predictions with empirical data. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Pakhomov, A. G., J. Doyle, S. Mathur, and M. R. Murphy. Effects of extremely high power microwave pulses on the population spike and long-term potentiation in rat hippocampal slices. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Adair, E. R. S. J. Allen, K. S. Mylacraine, R. G. Olsen, F. A. Ruhr, W. D. Hurt, P. Gajšek, J. M. Ziriaux, D. D. Cox, and D. Marchello. A new test facility for whole-body exposure of human subjects at 100 MHz. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Jauchem, J. R., M. R. Frei, K. L. Ryan, and R. M. Kovatch. Repeated exposure of C3H/HeJ mice to ultra-wideband electromagnetic pulses: No effects on mammary tumors. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

D'Andrea, J. A., D. D. Cox, R. Garay, J. M. Ziriaux, and P. A. Mason. No adverse effects of high

wrist SAR in the monkey during induced radio frequency currents at 13.56 MHz. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Ziriaux, J. M., J. A. D'Andrea, S.-T. Lu, S. Mathur, D. D. Cox, K. Henry, K. Kosub, R. Garay, and W. D. Hurt. Comparing thermometry and FD-TD predictions: Measurement versus theory. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Gajšek, P., J. M. Ziriaux, W. D. Hurt, and P. A. Mason. Effects of permittivity values on SAR calculations in a man model. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Miller, S., J. H. Merritt, M. R. Murphy, C. T. Kuhnel, L. R. Johnson, R. L. Taylor, J. M. Curtis, W. D. Hurt, and P. A. Mason, P. A. Effects of microwave radiation and restraint stress on the integrity of the blood brain barrier. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Merritt, J. H. and P. A. Mason. A review of microwave induced blood brain barrier permeability changes. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Mason, P. A., S. A. Miller, J. H. Merritt, T. L. Scholin, K. Mahajan, and M. R. Murphy. An overview of the Air Force Research Laboratory's current blood brain barrier research effort. Abstracts of the 23rd Annual Meeting of the Bioelectromagnetics Society, St. Paul, MN, 10-14 June 2001.

Pakhomov, A. G., J. Doyle, S. Mathur, and M. R. Murphy. Retaining of the long-term potentiation in hippocampal slices after high peak power microwave exposure and heating, ElectroMed 2001, 2nd International Symposium on Nonthermal Medical/Biological Treatments using Electromagnetic Fields and Ionized Gases, Portsmouth, VA, 20-23 May 2001.

2000

Mason, P. A., S. Miller, M. R. Murphy, and J. H. Merritt. Effects of microwave exposure combined with stress on the integrity of the blood-brain barrier. Abstracts of the 30th Annual Meeting of the Society for Neuroscience, New Orleans, LA, 4-9 November 2000.

Miller, S. A., M. R. Murphy, J. H. Merritt, and P. A. Mason. Blood brain barrier (BBB) integrity following exposure to 915 MHz microwaves and restraint stress. In Abstracts of the 7th Michaelson Research Conference, Gig Harbor, WA, 11-14 August 2000.

Murphy, M. R. Research Progress Report of WHO Collaborating Center USAFRL Radio Frequency Radiation Branch. Annual Meeting of the EMF International Advisory Committee of the World Health Organization, Geneva, June 2000.

Mason, P. A., P. Gajšek, J. M. Ziriak, W. D. Hurt, and T. J. Walters. Predicted SAR values in man as a function of EMF exposure parameters. Abstracts of the 22nd Annual Bioelectromagnetics Society Meeting, Munich, Germany, 11-16 June 2000.

D'Andrea, J. A., J. M. Ziriak, D. J. Hatcher, D. D. Cox, P. J. Henry, K. R. Kosub, and P. Mason. Effects of head resonant radiofrequency radiation on time estimation behavior of rhesus monkeys. Abstracts of the 22nd Annual Bioelectromagnetics Society Meeting, Munich, Germany, 11-16 June 2000.

Adair, E. R., K. S. Mylacraine, B. L. Cobb, and D. D. Cox. Additive effects of mild Exercise on the heat loss responses of human volunteers before and during partial-body RF exposure. Abstracts of the 22nd Annual Bioelectromagnetics Society Meeting, Munich, Germany, 11-16 June 2000.

Walters, T. J., D. A. Nelson, K. L. Ryan, J. D'Andrea, D. W. Blick, L. R. Johnson, and P. A. Mason. Surface heating from millimeter wave irradiation: Modeling inter-species variations. Abstracts of the 22nd Annual Bioelectromagnetics Society meeting, Munich, Germany, 11-16 June 2000.

Gajšek, P., J. M. Ziriak, W. D. Hurt, T. J. Walters, and P. A. Mason. Parametric dependence of SAR on permittivity values. Abstracts of the 22nd Annual Bioelectromagnetics Society Meeting, Munich, Germany, 11-16 June 2000.

Ziriak, J., S.-T. Lu, S. Mathur, D. Cox, P. Henry, K. Kosub, R. Garav, W. Hurt, and J. A. D'Andrea. Verifying FD-TD predictions with thermometry measurements. 22nd Annual Bioelectromagnetics Society Meeting, Munich, Germany, 11-16 June 2000.

Ryan, K. L., T. J. Walters, J. D'Andrea, J. R. Jauchem, and P. A. Mason. Radio frequency radiation of millimeter wave length: Potential occupational safety issues relating to surface heating. Abstracts of the 22nd Annual Bioelectromagnetics Society meeting, Munich, Germany, 11-16 June 2000.

Blick, D. W., T. J. Walters, and L. R. Johnson. Millimeter-wave heating of human skin: Effects of ambient temperature. Abstracts of the 22nd Annual Bioelectromagnetics Society Meeting, Munich, Germany, 11-16 June 2000.

Ryan, K. L., J. E. Kalns, P. A. Mason, J. G. Bruno, R. Gooden, and J. L. Kiel. Oxidative stress precedes circulatory failure induced by 35 GHz microwave heating. Experimental Biology 2000, San Diego, CA, 15-18 April 2000.

Kalns, J. E., K. L. Ryan, P. A. Mason, J. Scruggs, R. Gooden, and J. L. Kiel. Protein nitration accompanies heat stroke and hemorrhage. Experimental Biology 2000, San Diego, CA, 15-18 April 2000.

Walters, T. J., Ryan, K. L., T. L. Scholin, and P. A. Mason. Neuronal damage following thermal

stress. Experimental Biology 2000, San Diego, CA, 15-18 April 2000.

Adair, E. R., K. S. Mylacraine, and B. L. Cobb. Additive effects of mild exercise on the heat loss responses of human volunteers during partial body RF exposure at 2450 MHz. Experimental Biology 2000, San Diego, CA, 15-18 April 2000.

1999

D. A. Nelson. Heating effects from millimeter wave irradiation: Modeling inter-species variations. 1999 International Mechanical Engineering Congress, Nashville, TN, 14-19 November 1999.

Walters, T. J., K. L., D. A. Nelson, D. W. Blick, and P. A. Mason. Effects of cutaneous blood flow on 94 GHz microwave induced skin heating in humans. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June, 1999.

D'Andrea, J. A., D. J. Hatcher, T. J. Walters, J. M. Ziriaux, W. D. Hurt, K. R. Kosub, and F. Weathersby. Facial detection of 94 GHz millimeter waves by non-human primate. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June, 1999.

Dooley, M. P., W. D. Hurt, J. H. Merritt, J. R. Jauchem, and T. J. Walters. Exposure of female rats to a 35 GHz electromagnetic field on day 1 of gestation does not alter pregnancy recognition, implantation rate, or embryonic and fetal survival to term. 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June, 1999.

Nelson, D. A., T. J. Walters, P. A. Mason, and M. T. Nelson. Modeling thermal effects of millimeter wave exposure in primate head. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June, 1999.

Walters, T. J., D. A. Nelson, K. L. Ryan, L. M. Tate, W. D. Hurt, J. M. Ziriaux, and P. A. Mason. Microwave-induced regional heating as a function of orientation: Relationship to FD-TD model. 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June, 1999.

Ryan, K. L., T. J. Walters, L. A. Paulus, and P. A. Mason. Determination of regional brain heating using biological indicators. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June, 1999.

Ziriaux, J. M., D. LeBlanc, P. A. Mason, and W. D. Hurt. Finite-Difference Time-Domain (FD-TD) for personal computers. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Mason, P. A., J. M. Ziriaux, W. D. Hurt, T. J. Walters, K. L. Ryan, D. J. Hatcher, D. D. Cox, H-H. Gao, J. W. Roby, T. Andrew, D. N. Nelson, and J. A. D'Andrea. Theoretical and empirical electromagnetic field (EMF) dosimetry using anatomical models, temperature probes, and functional and diffusion magnetic resonance imaging. Abstracts of the 21st Annual Meeting of

the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Adair, E. R., K. S. Mylacraine, and B. L. Cobb. Partial body exposure of human volunteers to 2450 MHz pulsed or CW fields provoke similar thermoregulatory responses. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Foster, K. R., E. R. Adair, and K. S. Mylacraine. Thermal modeling of extended (45 minute) exposures of human subjects to 2.45 GHz microwave energy. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Ryan, K. L., R. L. Taylor, H. M. Lehnert, K. Majahan, and P. A. Mason. Effects of 35 GHz microwave (MW) heating on catecholamine content in specific regions of the rat brain. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Kiel, J. L., R. Leman, E. A. Holwitt, S. P. Mathur, W. D. Hurt, P. A. Mason, J. L. Alls, and P. J. Morales. Nitration enhances the pulsed-microwave absorption by a tyrosine polymer. 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Pakhomov, A. G., J. Doyle, S. P. Mathur, J. L. Kiel, and M. R. Murphy. Search for specific physiological effects of extremely high power microwave pulses. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Adair, E. R., D. W. Blick, K. S. Mylacraine, and L. R. Johnson. Laser doppler imaging of skin blood flow as a useful adjunct tool for RF research. Abstracts of the 21st Annual Meeting of the Bioelectromagnetics Society, Long Beach, CA, 20-24 June 1999.

Adair, E. R. Radio-frequency waves: Nervous system effects. In Encyclopedia of Neuroscience, 2nd Edition, G. Adelman and B. H. Smith, eds., Elsevier, New York, pp. 1754-1755, 1999.

Ryan, K. L., R. L. Taylor, H. M. Lehnert, K. Majahan, T. J. Walters, and P. A. Mason. FASEB Journal 13:A743, 1999.

Adair, E. R., K. S. Mylacraine, and B. L. Cobb. Physiological responses of human volunteers during partial body RF exposure to 2450 MHz pulsed and CW fields. FASEB Journal 13:A743, 1999.

Walters, T. J., P. A. Mason, H. M. Lehnert, K. Mahajan, T. L. Scholin, and K. L. Ryan. HSP expression in the CNS may be dissociated from whole-body thermotolerance. FASEB Journal 13:A743, 1999.

1998

Murphy, M. R. Bioeffects testing on non-lethal weapons: Merits, metrics, and methodologies. Jane's 98 Conference on Non-Lethal Weapons, London, 1-4 December 1998.

Erdreich, L. S., W. H. Bailey, B. J. Klauenberg, and M. R. Murphy. Comparison of radio-frequency radiation exposure standards worldwide. 43rd Health Physics Society Meeting, Minneapolis, MN, 13-17 July 1998.

Walters, T. J., D. A. Nelson, D. W. Blick, L. Johnson, and J. D'Andrea. The rate of skin heating in response to 94 GHz MM irradiation in humans, rhesus monkeys, and rats. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Ryan, K. L., K. Mahajan, H. M. Lehnert, T. L. Scholin, M. R. Tehrany, J. R. Jauchem, and P. A. Mason. Brain c-fos induced by 35-GHz radiofrequency radiation (RFR) exposure in ketamine- and pentobarbital-anesthetized rats. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Miller, S. A., M. E. Bronson, W. L. Williams, L. Paulus, J. M. Curtis, and M. R. Murphy. Ultrawideband radiation and phenylenetetrazole-induced convulsions in rats. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Jauchem, J. R., R. L. Seaman, H. M. Lehnert, S. Mathur, K. L. Ryan, and M. R. Frei. Exposure of rats to ultrawideband electromagnetic pulses: Lack of effects on heart rate and blood pressure. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Pakhomov, A. G., M. L. Belt, D. D. Cox, S. Mathur, Y. Aykel, and M. R. Murphy. Immediate effects of extremely high power microwave pulses on the beating rhythm in isolated frog heart auricle. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Blick, D. W., K. R. Foster, P. J. Rui, T. J. Walters, and E. R. Adair. Skin heating and sensations of warmth and pain produced by microwaves: Data and thermal modeling. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Adair, E. R., B. L. Cobb, and K. S. Mylacraine. Physiological and thermoregulatory responses of human volunteers during whole-body RF exposure at 2450 MHz. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Lu, S., S. P. Mathur, B. Stuck, J. Zwick, J. A. D'Andrea, J. Zirias, J. H. Merritt, G. Luty, S. McCleod, and M. Johnson. Retinal effects of high peak power L-band microwaves in monkeys. Abstracts of the 20th Annual Meeting of the Bioelectromagnetics Society, St. Petersburg, FL, 7-11 June 1998.

Murphy, M. R. and J. H. Merritt. Health and safety aspects of high power microwave exposure. Proceedings of the European Electromagnetic Conference (EUROEM98), Tel Aviv, Israel, 14-19 June 1998.

Walters, T. J., K. L. Ryan, and P. A. Mason. The influence of brain and core temperature on endurance performance. FASEB J 12:A123, Experimental Biology '98, 18-22 April 1998, San Francisco, CA.

Adair, E. R., B. L. Cobb, and K. S. Mylacraine. Physiological responses of human volunteers during whole-body RF exposure at 2450 MHz. FASEB J 12:A55, Experimental Biology '98, 18-22 April 1998, San Francisco, CA.

Ryan, K. L., K. Mahajan, H. M. Lehnert, M. R. Tehrany, J. R. Jauchem, and P. A. Mason. Brain c-fos induced by 35-GHz microwave heating, environmental heating, and cutaneous noxious thermal stimulation. FASEB Journal 12:A120, Experimental Biology '98, 18-22 April 1998, San Francisco, CA.

Mason, P. A., T. J. Walters, H. M. Lehnert, K. Mahajan, E. B. Skitek, T. Scholin, R. L. Taylor, and K. L. Ryan. Thermal tolerance induced by 2.06-GHz microwave heating. FASEB Journal 12:A121, Experimental Biology '98, 18-22 April 1998, San Francisco, CA.

Nelson, D. A., P. A. Mason, and D. Miller. Microwave-induced temperature gradients in the rat brain. 17th Southern Biomedical Engineering Conference, San Antonio, TX, 16-18 February 1998.

1997

Klaunig, B. J. and M. R. Murphy. NATO activities as an aid toward international harmonization of EMF standards. Proceedings of the 2nd World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, 8-13 June 1997.

Adair, E. R., S. Hartman, L. Bergland, and G. Mack. Physiological and perceptual responses of human volunteers during whole-body RF exposure at 450 MHz. Proceedings of the 2nd World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, 8-13 June 1997.

D'Andrea, J., J. Zirix, S. Lu, S. Mathur, J. H. Merritt, M. Johnson, G. Luty, D. McLeod, H. Zwick, and B. Stuck. Ocular effects in non-human primates after exposure to high peak power microwave pulses. Proceedings of the 2nd World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, 8-13 June 1997.

Zirix, J., C. Furse, J. D'Andrea, D. Hatcher, P. A. Mason, O. Gandhi. Comparison of FD-TD and experimentally determined local and whole-body SAR in a rhesus monkey model. Proceedings of the 2nd World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, 8-13 June 1997.

Mason, P. A., J. Zirix, W. D. Hurt, J. D'Andrea, and T. J. Walters. Convergent technologies in microwave technology. Proceedings of the 2nd World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, 8-13 June 1997.

Merritt, J. H., J. R. Jauchem, P. A. Mason, and K. L. Ryan. Alteration of the blood-brain barrier by microwave induced hyperthermia. Proceedings of the 2nd World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, 8-13 June 1997.

Miller, S. A., B. L. Cobb, S. C. Baker, J. M. Curtis, M. L. Williams, and M. R. Murphy. The use of ultrasonic vocalizations as an assessment tool for teratology and toxicology. International Behavioral Neuroscience Society, San Diego, CA, April 1997.

Technical Reports

2003

Simonds, J. The non-lethal mortar munition residual projectile body: A human effects review. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2003-0139, Brooks AFB, TX, October 2003.

Simonds, J., T. Dayton, and B. J. Klauenberg. The XM95 non-lethal rifle launched munition: A human effects review. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-0138, Brooks AFB, TX, October 2003.

Simonds, J. and R. Constable. Crowd control CEP blunt impact induced effectiveness assessment. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2003-0100, Brooks AFB, TX, July 2003.

Sherry, C., C. Brown, C. Beason, T. Dayton, J. Ross, J. Jauchem, L. Johnson, and C. Kuhnel. An evaluation of the electrical properties and bio-behavioral effects of four commercially available Tasers and the Jaycor Stick Shocker. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2003-0089, Brooks AFB, TX, June 2003.

Hanna, N. and J. Auton. Development of a parallel processing system for the advancement of Bio-Research Imaging Sources and Knowledge (BRISK). U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2003-0038, Brooks AFB, TX, March 2003.

Gonzalez, D.L., R. Constable, T. E. Dayton, J. Widder, B. J. Klauenberg. 66 mm non-lethal grenade: Human effects review. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2003-0025, Brooks AFB, TX, March 2003

Gonzalez, D.L., R. Constable, C. J. Sherry, T. Dayton, and B. J. Klauenberg. Taser area denial device: A human effects review. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2003-0026, Brooks AFB, TX, March 2003.

2002

LaFollette, R. M. Design of credit-card size electromagnetic overexposure meter. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0153, Brooks AFB, TX, August 2002.

VonHanwehr, R. and D. Lewis. An RF-excited, polymer-coupled and molecularly-targeted biothreat agent defeat system. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0110, Brooks AFB, TX, May 2002.

Sloan, M. and G. Irving. Surface Decontamination using electromagnetic field/laser emitters. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0055, Brooks AFB, TX, January 2002.

Zeltser, G. Photocatalytic plasma jet. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0035, Brooks AFB, TX, January 2002.

Meltz, M. and D. Smolenski. Electromagnetic field overexposure indicator. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0022, Brooks AFB, TX, February 2002.

Thuesen, L. CBWA decontamination unit based on carbon nanotube cathodes. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0016, Brooks AFB, TX, January 2002.

Wavering, T. and A. Sucheta. Nanomaterials for low-cost electromagnetic field alarms. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0010, Brooks AFB, TX, January 2002.

2001

Jaeger, M. and N. Elkouh. Low temperature plasma source for chemical and biological decontamination, U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2002-0001, Brooks AFB, TX, December 2001.

Cook, M. C., C. J. Sherry, C. G. Brown, and J. R. Jauchem. Lack of effects on goal-directed behavior of high-intensity infrasound in a resonant chamber. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-2001-0154, Brooks AFB, TX, November 2001.

2000

Sherry, C., M. Cook, C. Brown, J. R. Jauchem, J. H. Merritt, and M. R. Murphy. An assessment of the effects of four acoustic energy devices on animal behavior. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-2000-0153, October 2000.

Blick, D. W., F. R. Weathersby, S. A. Miller, D. J. Cosgrove, and M. R. Murphy. Non-human primate model for performance effects of ethanol. U. S. Air Force Research Laboratory

Technical Report AFRL-HE-BR-TR-2000-0091, Brooks AFB, TX, September 2000.

Lu, S.-T., S. P. Mathur, J. A. D'Andrea, J. M. Ziriaux, J. H. Merritt, G. Luty, D. S. McLeod, and M. Johnson. Retinal effects of high peak power microwaves in rhesus monkeys. U. S. Air Force Research Laboratory Technical Report, AFRL-HE-BR-TR-1999-0231, Brooks AFB, TX, June 2000.

Polson, P. and L. N. Heynick. Analysis of the potential for radiofrequency radiation bioeffects to result from operation of the proposed ONR and Air Force High-Frequency Active Auroral Research Program Ionospheric Research Instrument (HAARP IRI): General analysis. U. S. Air Force Research Laboratory Technical Report, AFRL-HE-BR-TR-2000-0060, Brooks AFB, TX, May 2000.

Ziriaux, J. M. Subtle Measurement of Behavior Effects of Microwave Radiation. U. S. Air Force Research Laboratory Technical Report, AFRL-HE-BR-TR-1998-0103, Brooks AFB, TX, February 2000.

1999

Beauregard, N., J. Brewer, and R. Finn. Development of Radio Frequency Radiation Hazard Assessment and Training (RFHAT) Tool. U. S. Air Force Laboratory Technical Report, AFRL-HE-BR-TR-1999-0181, Brooks AFB, TX, November 1999.

1998

Silvestro, J. Development of Electromagnetic Dosimetry. U. S. Air Force Research Laboratory Technical Report AFRL-HE-BR-TR-1998-0030, Brooks AFB, TX, April 1998.

1997

Brewer, J., N. L. Beauregard, R. A. Tell, and S. S. Sorensen. Proceedings of RF and UWB measurements symposium. U. S. Air Force Armstrong Laboratory Technical Report AL/OE-PC-1997-0026, Brooks AFB, TX, June 1997.

Holland, R. Development of an [MRI Based] anatomical block model of a human body. U. S. Air Force Armstrong Laboratory Technical Report AL/OE-TR-1997-0029, Brooks AFB, TX, March 1997.